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ABSTRACT

This paper reviews technology usage in four different methods of teaching U.S. government. The paper reviews effective technology with traditional synchronous lecture; reviews teaching U.S. government using a smart classroom with live Internet feeds; explores full video capability and use of PowerPoint software; examines Web-enhanced U.S. government using the Blackboard course management software that enhances the regular synchronous lectures; and discusses asynchronous Internet versions of U.S. government, including tele-Web versions and a pure Internet U.S. government. For each level of technology, the paper discusses advantages and disadvantages of using technology, gives tips for effective use, and evaluates what is on the horizon in teaching technology. The paper provides fundamental tips, based on 25+ years of teaching and experience involving undergraduate and graduate political science courses. (Author/BT)

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Technology Levels and Teaching American Government

by
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Technology Levels and Teaching American Government

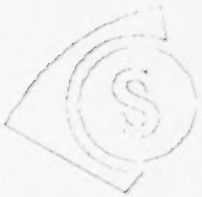
By J Michael Thomson, Northern Kentucky University

I. Abstract

This paper will review technology usage in four different methods of teaching American Government. First this paper reviews effective technology with traditional synchronous lecture. Then, we review teaching American Government using a "smart classroom" with live Internet feeds, full video capability and Power Point. Third, we examine "web-enhanced" American Government using the Blackboard course management software that enhances the regular synchronous lectures. Lastly, we review asynchronous Internet versions of American Government including a tele-Web version and a pure Internet American Government. For each level of technology, we discuss advantages and disadvantages of using technology, and tips for effective use. In the final section, we look at what is on the horizon in teaching technology.

The basis of this paper is primarily subjective. This author will not try to justify this work as objective empirical research with yet again another student satisfaction survey of self-selected distance learners who proclaim liking the very thing they choose. This paper is not based a bogus statistical analysis of grades across technology class types with no controls over who was in each group. Finally this paper is not a citation war between so-called academic technology experts whose expertise includes a fancy little (CIO) but little or no front-line teaching in the past quarter century. Instead, this paper is a personal examination intended to provide basic tips from twenty-fives years of teaching undergraduate and graduate courses in political science as well as three years experience as the university's faculty development officer. The paper is designed to provoke faculty on both sides of the technology aisle to focus on one fundamental question – **is using technology improving the learning environments we are entrusted to create and deliver?**

II. Introduction



Teaching American Government, or other general education introductions to our discipline, is now a staple job component for most Political Science teaching faculty. For most of us teaching these courses, three significant changes have occurred during our career. First, the nature of higher education has turned into **a corporate enterprise**. The bottom line of higher education is more than providing a quality educational experience Strosnider (1998), Winston (1999, 1997). **Higher education is also about increasing access and opportunity** so that more people will apply, attend and receive degrees. This is especially true for distance education (DE) learners (Taylor, Parker and Tebeaux, 2001). Ultimately, higher education now plays a key role in providing a workforce for the information economy that helps drive American economic success (Laurilland, 2001). Many call for massive reforms of higher education because we are ill-equipped to participate meaningfully in the knowledge based economy (Noone and Swenson, 2001).

Teaching introductory classes is not as much about introducing students to our discipline but providing a general education experience as part of curriculum package sold to students as necessary for a degree. General education is now part of a fundamental fiscal reality that drives higher education institutional planning and budgeting processes. Today, students enroll in higher education (or post-secondary education as it is often named today) because it is the minimum qualification for many job fields. Our students in American Government, especially freshman, are less politically sophisticated and more removed from knowledge or participation in political processes (Bennett and Bennett, 2002).

We stopped preparing the intellectual elite for our society a few decades ago. Introductory courses today are designed to process larger and larger numbers of students through a general education experience. Demb (2002) even argues that we should shift towards a "supermarket model" of undergraduate education. Students do not seek an education, but a degree which entitles them to receive the financial and emotional rewards from a "career" in a more educated and flexible information driven workforce. Gardner and Jewler's (2000) freshman orientation text graphs and charts the expected fiscal rewards of college ($10,000 per year) and professional ($17,000) degrees. Undergraduate education is become a workforce preparation enterprise.

University budgets are increasingly based upon meeting enrollment projections. Deans and chairs have become more involved in the business side of education. They monitor enrollment patterns, drop rates and the all important freshman retention rates. Introductory experiences are cumulated on budget officer's spreadsheets as positive cash flow with retention rates used as future year's projected tuition income.

Hopefully, these introductory courses also provide quality introductions to our discipline and also induce students to become majors in our many and diverse subfields. However, there are more than fiscal realities working against building quality learning environments. Students do not understand premise of a student -- faculty relationship, but see themselves as "consumers" of this new education experience (Gardner and Jewler, 2000). Our introductory classes are no more than check marks on a degree sheet to be conquered on the path to the valued end-prize of a college degree. Students come to us with expectations of a passive learning reinforced from thousands of hours watching TV and movies. They demand a mix of entertainment with their information. Also, students want to know the relevance of course curricula materials, not only the relevance to the "big picture" of the outside world, but also relevance to their specific intended job field. Introductory political science courses are still very popular not just because students need them for general education, but also because students choose them. Our field is rich with practical linkages to our theoretical base. The same can not be said for sister disciplines such as philosophy whose enrollments and majors have dwindled to the point that in small and medium sized schools the discipline is subsumed into larger departments.

In response to these fiscal pressures, faculty prepare lectures with more enthusiasm and which also provide some entertainment value (Baum, 2002). They also become more involved in classroom management such as dealing with casual conversation during lectures, students wondering in/out of class, the use of cell phones / pagers and other behaviors heretofore considered abhorrent to many

faculty. Faculty must also try to instill core values of academe to an audience that sees little wrong with using term paper mills, plagiarizing, pirating, and cheating (Groark, et al, 2001; Rumbough, 2001). While we can spend hours lamenting "the good old days" of higher education, the reality is that the business side of post-secondary education has filtered down from the board room to faculty life. Faculty who struggle with this ever- demanding reality will find themselves at odds with administrators, students and a less than sympathetic general public who still see professors as overpaid professionals who only work twelve hours a week but have permanent job security. Faculty who accept this reality and learn to work within the boundaries of the new system can still fight to maintain educational quality in introductory course experiences. Technology can be an integral part of maintaining educational quality. However, it is very time consuming, often unnoticed, and rarely rewarded by educational institutions.

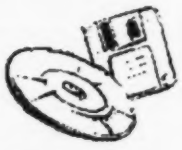
Second, the nature of teaching has shifted from **teaching to learning** (Brown, 2001; Buckley, 2001; Poindexter, 2001). Less focus is on discipline coverage and more emphasis on **active student learning** (Chickering and Ehrmann, 1996; Grasha, 2001). Faculty are no longer the "sages on the sage" but "guides on the side." Institutions have increasingly taken up the motto "learner-centered." In part, this shift is the result of the increased scholarship of teaching and learning (Mann, 2002). Now that we know more about how and why students learn, we can create more successful learning environments. It is also a favorite buzz word of Provosts and Presidents who see the fiscal benefits of active learning environments. When using the language of active learner pedagogy, this author often wonders if it is really a secret codeword for "customer satisfaction."

In response to these pedagogical pressures, faculty rework traditional synchronous educational experiences to include film clips, TV show examples and personal stories (Buckleitner, 2001). Students are accustomed to video-driven experiences and these insertions help offset the dullness of the talking head syndrome. Also, today's generation X and millennium students need personal experiences and examples as part of their learning processes Lancaster and Stillman (2002). They provide mental maps that help digest and even remember core concepts. Another important aspect of this shifting is the use of active learning components. Reaction papers, laboratory assignments, team projects, hypothetical cases, simulations and other activities nudge students towards the application side of political science. They learn because they are more involved in the outcomes of these activities, even if they have a minimal contribution to the grading scheme. While technology is not central to the seven core active learning principles (Chickering and Ehrmann, 1996; http://www.aahe.org/technology/ehrmann.htm), technology can provide the glitz and high impact that impresses students and administrators Buckleitner, 2002)

Some faculty struggle with the shift from teaching to learning because they still desire to remain the sage on the sage. Sometimes it is a matter of age (Smith, 1999) while many times it is not understanding the generation.com audience (Medina, et al, 2001; International Society For Technology In Education, 1999). Regardless of the reason, "learning resistant" faculty become less in touch with the students they are teaching, and less effective in communicating the very discipline that strikes a passion within them. Other faculty desire to make the teaching to

learning shift, but are overwhelmed with maintaining both a discipline that grows in knowledge base and the new emerging scholarship of teaching and learning (Starkweather, 2002). Technology can be very helpful in revamping our courses from teaching to learning experiences. Most higher education institutions have created faculty development centers (FTC) to provide individual instruction and mentoring to the strange new world of student learning (Bakutes, 1998). FTCs can be a central technology showcase. By locating this function in one place as opposed to distributing high-end teaching technology across a campus, university development officers can attract corporate sponsors and can entice individual naming opportunities. By and large these centers desire to help individual faculty improve teaching. However, many are more enamored with faculty using their technology then they are with faculty pedagogical development. The most difficult problem with FDCs is getting faculty to attend workshops and other events. For many faculty, FDC events have the same feeling that our students have when we return a paper and then tell them to visit a writing center – it is a proverbial baseball manger's sentence back to the minor leagues for the purpose of "working out our swing." PhDs are trained to be independent, self-sufficient learners are not comfortable rubbing keyboards in a Power Point workshop with the very staff that support them.

Third, and most dramatic, the **minimum level of quality instruction has become increasing technology oriented**. Almost all course materials today are word processed and include more graphical materials. Some faculty even demand electronic paper delivery from students so that they can edit papers and check source citation and plagiarism with software such as EVE2. The primary faculty contact for most students outside of class has moved from office visits and occasional live phone calls to email, cell phones, voice mail. In some cases it is even discussion boards and chat rooms. Like all information professionals, faculty use software such as Word, Excel, Power Point, and Outlook to become more efficient personally. Since we are in an information delivery business, faculty are also expected to use technology to enhance, and even deliver coursework. In part, this shift is the natural result of the information society. Also in part, this shift is part of an expectation from the return on technology investments made by boards and presidents. They know that laptops and servers are cheaper than bricks and mortar and sometimes they even buy into the technology panacea that virtual degrees can help right the ship of higher education diseconomies. After all, only health care rates have grown faster than tuition rates in the US over the last two decades.



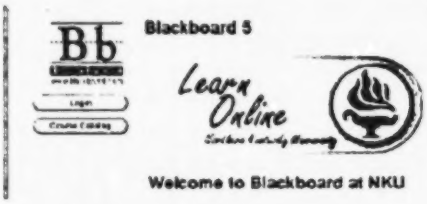
In response to these technology pressures, faculty weave technology in a wide range of learning experiences. At one end are the simple efficiency increases from using email and attachments (Rockefeller Foundation, 2002). In the mid range is technology-rich learning by providing 24x7 access to course materials, students teaching other students in threaded discussion groups, and live chat sessions between faculty and students for pre-test reviews (Cennamo, 2002). At the far end are virtual courses and degrees using course management systems, electronic office hours and audio/streaming of lecture material (Lujan, 2001). While there is increasing literature examining the impact of technology, one thing is clear – **there is no consensus on technology effectiveness** (Botsch and Botsch, 2001; Galvin, 2001; Piotrowski and Vodanovick, 2000; Robson, 2000; Starkweather, 2002; Stewart, 2002).

In terms of the technology revolution, a small group of faculty embrace technology quickly, often called early innovators (Butler and Selboom, 2002). They often spend countless hours pioneering new technologies with little or no reward for their efforts. Most faculty desire to integrate technology effectively, but they are often overwhelmed and intimidated with maintaining mastery of the now tri-fold agenda: discipline knowledge, active learning techniques and fast-changing technologies. Again, institutions have relied on faculty development centers or IT departments to provide general software training in groups and "just-in-time" learning experiences through individual mentoring and help desks.

While all three factors are important, this paper focuses on the increased reliance on technology in teaching. We review teaching American Government through four lenses:

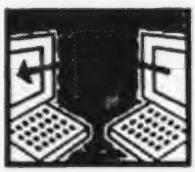
- **Traditional Synchronous Learning Environments** where faculty deliver courses personally but use email and other technologies occasionally. The use of technology is peripheral to the learning experience, and more of an administrative convenience.

- **Smart Synchronous Learning Environments** where faculty deliver courses personally but also weave Internet, power point and video technologies into their live learning experiences. While the smart classroom permits multi-media learning environments, they are still synchronous scheduled experiences of 45 semester contact hours or the trimester equivalent.



- **Web-Enhanced Learning Environments** where faculty still deliver courses personally, but use classroom management softwares such as Black Board or Web-CT. These technologies provide 24x7 learning environments through the Internet, discussion and chat. Learning now occurs and is encouraged at the student's convenience, and outside the scheduled timeframes. Often traditional synchronous grading techniques are rearranged to ensure these technology experiences are not simply layered on top of traditional environments.

- **Asynchronous Learning Environments** where faculty deliver courses through tele-video and/or the Internet. Synchronous experiences are not merely enhanced, but replaced. Student learning is primarily on-line, as well evaluation and grading. Faculty may not meet students except for an orientation session.



We will review the strengths and weaknesses of each environment so that faculty considering technology can best judge the most appropriate usage of that technology to the learning environments they desire to create. After that discussion we return to the central inquiry of this paper - **is the use of technology improving learning environments?**

III. Synchronous Learning Environments: Traditional and Smart Rooms

Little has changed in the way we are prepared for and teach introductory college experiences. We attend graduate school, are examined by distinguished scholars in the field over a variety of courses through exams / papers, and then we demonstrate our skill and mastery through a dissertation. With little or no preparation for the teaching profession, we are unleashed on America's young people to ply our new trade in a bizarre balancing act of teaching, research and service (Noone and Swenson, 2001). Students enroll in our classes, and we deliver the nuggets of political science wrapped in packages called "Intro to Political Science," "American Politics," or "International Politics." Students attend classes, listen, take notes and respond to our inquiries. Hopefully, they pay attention, and even laugh at our aged humor. We evaluate students through a series of tests, papers and other assignments in complicated grading schema that culminate with the posting of grades and a well-deserved semester break. At the start of each semester we refresh and replay our courses to new students, who, by some odd demographic quirk, seem to be getting younger each year (Smith, 1999). We can package and repackage the title / content of these experiences much the way physical plant refreshes the paint on the walls, the carpet on the floors or the chairs in our rooms. But, by and large, the essence of our profession remains stable. I call synchronous lecture time the "magic hour" where by my skill and knowledge, I am sent yet again by my chair to beat back the walls of ignorance and transform unsuspecting passive students into active learners who grasp the core tenants of our field, who become politically aware / active and maybe even become one of us.

While these core learning experiences have remained relatively stable, much has changed about the support systems for higher education, especially in the last fifty years. Early in the history of higher education, faculty were their own admission, registration and fiscal agents. We even provided the library by which most students studied. Those musky old robes that we don one or two times a year to parade like academic peacocks into a commencement ceremony for the photo-op of grateful graduates and families, had real function and meaning at one time.

Similar robes worn by our predecessors protected them from the damp, cold lecture halls while they instructed students not all that differently than what we deliver today. However, up one sleeve were their teaching notes, registrations and student proceeds while the other sleeve held their favorite books and manuscripts judiciously loaned only to the most promising of prospects. Faculty banded together like guild workers to build campuses in larger cities and formed colleges and universities where learning could be more than the sum of their lectures. They not only ran they show – they WERE the show. College staffs were cooks, clerks and custodians to help keep the food flowing, degrees stamped and fires running. Now those were the good old days!

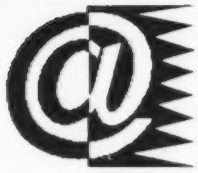
Over time, while this part of the profession remained stable, the sheer influx of students required faculty to relinquish administrative duties. These once-peripheral concerns have grown into various administrative, student-life and athletic spheres of influence that not only rival but can overshadow the very teaching they were originally designed to support. Faculty serve on "collegial governance" bodies such as Faculty Senate just to remind administrative bureaucracies of the institutions core mission – teaching and learning.

How does technology impact traditional synchronous learning environments? Typically faculty use technology in five ways:

- **Use of email as a contact tool**
- **Use of the Internet by students, especially in assignments and writing**
- **Use of videos and other media in teaching**
- **Use of the Internet by faculty via home pages and webs site examples in class**
- **Use of power point to deliver lectures.**

Even the most technologically recalcitrant professor uses email today. It has become the staple communication tool for faculty – student interaction outside the classroom. Email has the advantage of permitting 24 hour communication. It also allows professors to create discussion or distribution lists to make announcements, answer questions, or deliver materials. There are downsides to email dependence. Students thinking as customers expect faculty to respond to email immediately. This is often difficult when faculty are researching or traveling. Distribution lists are difficult to create and impossible to maintain, especially when students rely on non-university address that change frequently. Students use a variety of word processors, so email attachments might have to be saved in varying formats to reach your entire student audience. In receiving attachments, faculty may experience translation problems if import formats are not installed on their machine. Mail servers go down and critical communications are not delivered in a timely manner. Faculty often work at home and there is always the issue of synching home and office emails, contact lists and teaching files.

Overall, email has not improved learning as much as improved communications between faculty and students. The downsides can be considerable in teaching larger classes, but recent technologies help overcome the negatives. Many universities have Internet based email systems which permit email from any Internet access machine. Also, Outlook can import and export email, contacts, lists and even tasks from machine to machine. Finally, palm pilots are fairly inexpensive, and they can synch to Outlook and other programs permitting faculty to make student appoints right in the classroom.



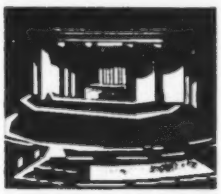
The second most prevalent technology today is student use of the Internet, especially for research and writing. The learning advantages are considerable, including access to research materials at smaller institutions, convenient access (e.g. searching / downloading at home), and access to primary data. There is a new breed of student who researches and writes exclusively using Internet sources (Steep, 2002). The downsides can be demanding. Faculty now spend time reversing student preconceptions that grabbing materials from the Internet without citation or care and simply dumping them into a written assigned allegedly authored by the student is not academically acceptable. Also, faculty face the proliferation of student paper sites (www.schoolsucks.com) where students can download or purchase entire assignments (Groark, 2001; Rumbough, 2001). While new softwares can help combat this problem, paper screening demands more faculty time while grading. The NKU Board just passed a student honor code and the Provost asked all faculty to place it in syllabi to combat just such problems (see http://www.nku.edu/~deanstudents/HonorCode.htm).

There is also the related problem of discriminating between the values of Internet sites. Individual faculty and often libraries must create teaching materials on evaluating Internet use (see http://www.nku.edu/~library/howto/evaluate.shtml). Academic articles from peer-reviewed sources are on the same search list with the raving lunacy of paranoid extremist group's propaganda. Overall, student use of the Internet can be an exciting tool that improves student learning, but it requires more faculty time to explain and demand proper academic Internet usage especially in graded written assignments.

Faculty can make use of Internet technologies as both a communications device and a teaching tool. Many faculty maintain web pages (e.g. www.nku.edu/~thomson) which can provide basic faculty contact information, syllabi and handouts. They can also use the Internet in class, if a smart room is available (see discussion below). On the positive side, faculty can shift the burden of printing to the student. Even if the email / attachment distribution system is not working properly, you can always tell students to download documents from your home page. Faculty can create lists of Web sites to help students' research of faculty specialty areas. The downside of faculty web page use for classes is the expertise involved to create Web pages as well as the constant time pressure to keep Web pages up-to-date (Butler and Sellborn, 2002).

In many institutions, faculty are getting the change to deliver synchronous lectures in "smart classrooms" with video, computer or other devices attached to presentation equipment. Three years ago, our institution had less than 10 such rooms across the campus. Today, over half of all classrooms are smart rooms and portable carts can easily make "smart" teaching the norm. In some schools this also includes the more dramatic step of every "ubiquitous mobile computing" through student laptops (see http://www.wfu.edu/Library/presentations/cumrec/). The advantage is that faculty can upgrade from overhead projections or VCR/TVs that hard to see. Computer generated full screen projections can be easily seen by all students. Also, the lectures can be presented in Power Point, the staple business presentation software today. Many introductory texts have Power Point slides already available for faculty editing and use. The Power Points proved an outline which if available to students, can be downloaded / printed for

note taking. Student retention of key concepts increases when students have basic outlines available and are just adding to these during class. It also helps answer the proverbial student question "Dr. Thomson, I missed your class yesterday, what did we cover?" The answer is now – download the slides. Also, PP slides work best when there is a consistent color scheme, large fonts (30 points or higher), and not more than 20-25 words to a slide.



Another advantage of smart classrooms is using live Internet sites during class (Uschi, 2002). Instead of telling students about the Internet, you can show the Internet. It is particularly helpful in providing the latest news. When teaching during the 2000 fall elections, we would visit the news services ever class during the election controversy to watch democracy in action. There were times that news occurred WHILE WE WERE IN CLASS, which was very exciting. Last semester, when we were discussing Congress, I told a personal story about contacting our local Congress person. A student mentioned that they saw a certain Senator on television the preceding evening, and that he did a great job arguing points on a controversial issue that student was researching for his paper. We took this teachable moment a few steps further by getting online immediately and finding the contact information for that Senator. A student lent their cell phone to the student who saw the Senator on TV, and he called the number provided to us via the Web. The Senator was not available, but he left a message thanking the Senator for his insights on television. Students were universally struck that it was so easy to find and contact such an important person.

Finally, combining DVDs with smart room technology can really help infuse multi-media into lectures. I have shown clips from movies or other sources over the projection system. Clips work best when one to three minutes. This semester, I am downloading a series of clips to a CDRW drive that I can bring to class. Students intrigued by the clips will often comment to me that they rented the movie to see more.

Spicing up synchronous meetings with technology is not without its difficulties. The primary problem is that a technology failure as simple as a projector bulb can blow up your lecture if you do not have back up to your technology use. **The first rule of technology-based teaching is simple - the more technology that you use in a classroom, the more dependent you are on that technology for a successful learning environment. The corollary second rule - the more technology that you use in a classroom the easier it is for that technology to fail.** So, I always assume that the technology will fail and have a back up ready. It also means that any software or special items needed for a smart room have to be installed, proofed by faculty and maintained by an IT staff.

Second, while Power Point (PP) is a mainstay for business presentation, it does not necessarily lend itself to teaching. Faculty using PP for the first time can suddenly find themselves lecturing to a computer screen with their backs to the students. Lumen levels of projector systems also cause odd tradeoffs between enough room light to see the power point versus enough light for students to take notes and stay awake! Faculty who simply dump lectures to PP can provide so much detail that students do little writing, and possible pay less attention in class.

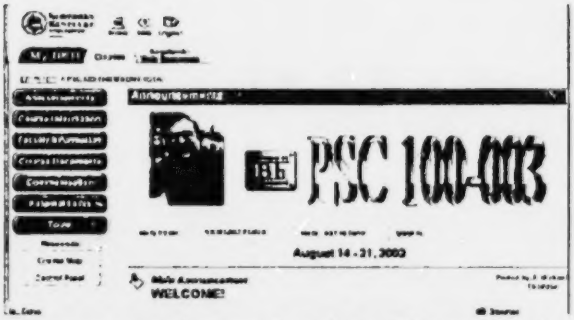
Third, whether faculty use any technology at all in a classroom, students often bring technology to class including cell phones and beepers. This requires a new level of classroom management for faculty. In our subfield (public administration), many students work in public safety and they are required to wear beepers. Other students may keep a cell phone active because of an impending "personal emergency" phone call.

In conclusion to the synchronous lecture section, technology can help faculty in the efficiency of course materials distribution and student communications. Smart rooms can even help faculty create multi-media experiences that generation X and millennium students find engaging. The technology, while useful, is still primarily a one-way distribution of information and does not take advantage of possible technology interactions such as discussion and chat. Each professor integrates technology differently, creating a new learning curve by students for each learning experience. Also, for the advantages of each technology use, there are pitfalls discussed above. **The core theme is the lone wolf problem**. While faculty are free to use / abuse technology in their teaching environments, they are mostly alone in creating, using and maintaining that technology. The more technology faculty use, the more time it steals from other activities. Often, RPT Committees are reluctant to recognize the time demands of technology, so it forces difficult trade-offs for faculty in terms of balancing a teaching, research and service agenda (Young, 2002). Also, there are always support issues of having a good computer, training in software applications that includes relevance for your teaching environments, updating key softwares, and timely accurate problem solving from IT Help Desk / staff (Butler and Sellborn, 2002). In conclusion, while technology assistance to synchronous learning environments has distinct benefits, **the price for the improved quality of learning falls squarely on the shoulders of faculty preparing and delivering technology enriched learning environments**. Also, technology use forces faculty to be dependent on IT support systems that vary widely in consistency and quality.

IV. Web-Enhanced Learning Environments

The solution by many universities to making better use of technology interaction, to creating a common look and feel for technology learning environments, to lessen the burden on the lone wolf faculty and to reducing the inconsistency of IT support is to employ a class management system. These systems such as Black Board and Web-CT provide that common look and feel to web fronts that faculty can use for common course functions: course announcements, syllabi distribution, faculty contact, course materials, assignments / tests, and posting grades. The software is centrally run on servers with standard software that is much easier to support than individual faculty web sites or homemade discussion forums / chats. IT support teams can purchase support contracts that given them stronger help for faculty problems. These packages also have built-in interaction tools such as threaded discussion forums, chat rooms, group formation, and file transfer. With very little training, faculty can create 24x7 learning environments where students can interact and help teach each other. From the student end, there is no software to install or learn. All that is needed is Internet access and the ability to fill in forms and hit a submit key. IT staff can populate the courses with students, reducing the burden on faculty to create discussion or email lists. Students maintain their own personal information, so faculty no longer maintain email lists. Instead of individual

consultation with each faculty, IT can provide mass-based training in both general technology use as well as course software management functions.



Typically, these course management systems are not used today to replace traditional synchronous learning experiences. They are employed to enhance the quality of learning environments. Aside from chat rooms, these packages are asynchronous in nature. **The power of asynchronous Internet learning is the convenience of time and place.** Students need only find a computer with Internet access and at their convenience they can be reading discussion forum entries of other students, preparing for live tests with computerized practice exams, sending draft work of papers to faculty, and contacting other students. So course management systems used to web-enhance courses permit faculty to combine the advantages of synchronous and asynchronous learning.

Have an Account? Login Here.

If you already have an account, enter your login information here and click the "Login" button below.

USERNAME:

PASSWORD:

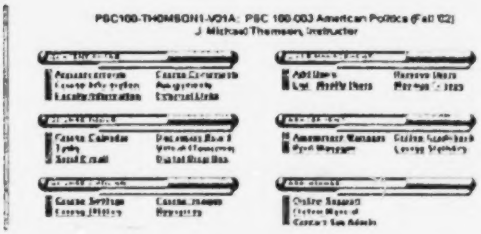
Forgot your password? Login

For faculty, there is less freedom. They are bounded by what the software is capable of doing. Foreign language professors, for example, have to create bizarre work-arounds to show many symbols. However, for the loss of freedom, these systems help solve some more delicate problems in Internet enriched teaching. By using a login system (username / password) and having course web fronts kept away from the general publi[illegible] they are essentially a virtual version of a synchronous clas[illegible]m. This elevates these web fronts to "fair use" intellectua[illegible]perty. What would violate copyright on a faculty website available to the public or the unive[illegible]y is now fair use of educational materials. Students, knowing that only classmates will read th[illegible]r electronic postings, are more willing to share their thoughts and feelings. Students who are reluctant to share ideas in a live classroom are now more willing to participate in discussions. By students marking "private" on discussion or chat postings, they are seen only by the faculty member. This permits students to share sensitive materials with faculty they would be reluctant to otherwise. Grade posting is very easy. Faculty can upload grades en-masse instead of individual emails. They c[illegible]n then send a single class email to announce grade availability. Students can login immediately instead of waiting for the next class, and they will only see their grades and evaluations.

There are even statistical features that permit faculty to monitor and even measure student activity. Faculty can know how many times students have viewed pages, the number and timing of student contributions to discussions / assignments and even count words for electronic contributions. If electronic participation is part of overall class participation, faculty can use these statistics in the grading process.

Creating and using these systems is no more complicated than electronic purchasing. Faculty have administrative course menus (pictured above) where they can add / find or remove students, make announcements, post documents, create discussion threads, post grades. There are even

features to customize button names and colors, add logos, import tests, and limit the features that students can see or use. Many textbooks now have course cartridges which can be uploaded by the faculty of IT software administrator. These cartridges can include chapter overviews, outlines, web links and sample test questions for student use. For faculty, they can include entire test backs that can create faculty-selected or even random assigned test questions. Also, courses form one semester can be rolled over to the next, so faculty can slowly build courses on-line.



Without replacing the core synchronous activity of face-to-face lectures, discussions and tests, faculty have powerful tools that enhance the quality of learning environments. But, as with all technology, there are occasional problems. **The largest disadvantage reported to faculty by students is layering.** Faculty add informational activities that require 1-2 hours per week of student time without lessening other course content requirements. Students complain that faculty use technology to layer more course work rather than enhance learning. Faculty need to re-think the grading and assignment structure so that electronic participation is meaningful.

The second disadvantage to course management systems is that **faculty must prepare course content well in advance** of teaching them. More time is spent during a semester in electronic course management, taking time away from lecture preparation. Course materials have to be loaded onto servers usually one document at a time, which can be a very time-consuming enterprise. The sheer number of student contacts needing faculty attention and response increases. Faculty spend some course time as front-line support for course management software, even if a good Help Desk exists because students with a technical problem will often ask their faculty before calling IT. It is ill advised for faculty to try a course management system for the first time while creating a new course or significantly revising an older course.

The third problem is **monitoring student participation**. It is the electronic equivalent of more class management problems in synchronous classes with cell phones, beepers, idle chatter and persistent tardiness. The electronic version of this manifestation is that student writing often deteriorates without specific quality expectations expressed by faculty and reinforced by early grading. Students, especially in chat rooms, can express themselves inappropriately, violate confidentialities, or even use these environments for purely social purposes. Faculty must create and enforce an electronic culture that encourages quality writing and respect for class mates.

Fourth, there is a **total reliance on IT and the server** where the class management system is stored. Recent examples of server related problems from my and other institutions include IT upgrading the server and having the chat room disappear the night before a scheduled exam review chat, IT taking a server down for maintenance without prior notice while students were working on final projects and assignments, and two students with the same last name confusing the data base and having passwords from one student overwrite the other, effectively blocking them from any course entry.

Finally, there are **serious market questions** about course management systems and their host companies. The market forces on these companies to make a profit are considerable. Many have overextended both their promises on what the software can do as well as their ability to support the product. The academic market is seen as unprofitable, and university teaching nuances are ignored so software developers can please more profitable corporate clients. Some companies offer low initial rates and then jump prices after one or two years. University CIOs under budget pressure switch companies in response. Some companies have gone under while others have been subsumed. Some smaller schools can not afford even initial investments into these systems. Hence, faculty investments into a course management system may be wasted if the company folds, or the institution switches systems because courses can not be imported across systems.

Web-enhanced teaching can significantly increase the convenience and access of students to learning opportunities beyond the borders of our scheduled classes. It can also create interactive communications between students as well as faculty. Course management systems solve many problems cited earlier in lone wolf style technology use. While there are some disadvantages, they outweigh the benefits when used appropriately. However, the theme of this section is faculty time. **Electronic course preparation, student population and content management are very time consuming, since they are directly layered onto synchronous lecture delivery and testing.**

It is my opinion that course management systems will first standardize on 1-2 products (Black Board and Web-CT) and will slowly take hold in the majority of synchronous learning environments in the next five years. Much like the way email has become universal since the early nineties, course systems will be seen as natural extensions of current synchronous learning. Faculty may vary widely in their use of these systems, but some schools may create an electronic course for every class scheduled much the same way every student now gets an email account. They will be bundled with **portal web sites** that will permit faculty to send messages to students before classes start, to distribute all materials electronically and to move all grades from their course management system to the university's main student information system.

The role of course management systems is not just to enhance synchronous environments. Higher education institutions are under sever fiscal pressure to provide more access without increasing prices. Bricks and mortar funding, especially in the public arena, is becoming increasingly difficult to obtain. It is part of the pressure to increase access and opportunity as described in the introduction. One of the solutions for increased access at lower or the same costs is offering courses and degrees on-line. Virtual degrees are sexy concepts for board members and higher education executive officers, who see technology a considerably cheaper investment than classroom buildings. It is often touted as a mechanism to reach new markets, especially those located far from any campus, or whose work schedule prevents scheduled synchronous education. However, there is considerable academic debate on the quality of the product, as well as fiscal debate on the real cost/benefits of its use. The next section will review this controversial learning environment – the virtual course.

V. Asynchronous Learning Environments

Asynchronous learning environments provide the student with the **ultimate educational convenience and freedom**. While the academic work of a course is still accomplished (hopefully), it is done at the student's convenience of time and place. No more drives to campus followed by hunting down parking spaces. For on-campus students (often the bulk of on-line enrollees at residential institutions), there is no more early morning classes. There is no programming to learn, no softwares to install, and no compatibility issues (e.g. Mac/PC).

On-line is a whole new world of academic activity. Power points or written mini-lectures are posted to replace synchronous session time. Threaded discussion forums are used to replace class discussions. Internet assignments are used to replace the traditional paper assignment. Class participation is not about signing off on a roll sheet but staying on track with course progress memos, scheduled course chats and discussion postings. Faculty can create tests that are only open for a specified period of time, with random assigned questions from a bank and electronic feedback for the right / wring answers. Office hours can be done in chat rooms or over web cams. The text can even be purchased on-line as a CD-ROM. So, learning, writing assignments, taking tests, checking grades and even meeting with the professors can all be done via the Web and without a trip to a classroom, office or library. All that is needed is a decent speed Internet connection and some Web-savvy.

Students do report downsides to e-learning. For the novice on-line student, there is no longer a professor reminding you of class assignments. Due dates creep up on these students who drop the class around the time of the first test. Overall, some students find e-learning a lonely enterprise that requires self motivation and discipline. Students needing social contact and gentle nudges on course progress find these courses lonely and difficult. There are also several technical issues surround on-line experiences. It takes a week or two to make sure that everyone has the necessary username/passwords, that they work, and that their browser / word processor / email are compatible with the system used for the course. It would be unwise to offer mandatory tests/quizzes/ assignments during this time, and this creates a timing problem for the course, especially in shorter formats such as a five week summer class. If a faculty is not using classroom management software, students must adapt their information systems to the professor's needs – such as keeping documents in a specialized software and downloading / installing plug-ins for browsers. Many students with AOL accounts find working in the classroom management software frustrating because the two are often incompatible. On-line testing can be a technical night mare with students being timed-out and having to send an email to the professor asking for their test to be reset constantly. Many students not used to on-line learning, and it is the faculty who becomes the prime IT support person for the course. It is not unusual for me to spend 25-40% of all student contact time in an e-course on electronic / information / technical support. If the faculty is not tech savvy, the students will get frustrated quickly. If they are referred to an IT Help Desk, most Help Desk employees are focused on campus technologies by faculty and staff and are reluctant to support student use across unlimited combinations of computers and peripheral devices. Another major problem is student computing bandwidth at home. Many faculty develop / test their on-line materials using a T-1

line from their college and university. While broadband services are now widely available in the home, most on-line students, even with the latest computers / software, are limited by their modem speed. Hence, faculty using high-end video / graphic materials (e.g. streaming video lecture) will have to create to versions of the course for high and low bandwidth students. Finally, some students report that on-line courses are no more than boring correspondence courses wrapped in an Internet package by professors using them to get our of classroom lectures.

For college administrators, there are pluses to the on-line experience. The largest saving are the fewer parking spaces and classrooms to build, schedule and maintain. There is also some odd notion that "we can hire the best experts in the world to develop our classes" and somehow local faculty become super teaching assistants to a handful of gurus selling web fronts for our use. The technology is Internet driven, which means it can be hosted, served, updated and maintained by central IT staff. Most CIOs prefer this delivery system because it is significantly more difficult to support the wide variety of information technologies across a campus.

There are administrative downsides. For smaller schools, classroom management systems are not cost-effective investments and it could eventually shut them out of the e-market without participating in some pricing consortium. Second, faculty self-select to use e-technologies. So, planning and building an entire degree is troublesome as it requires a commitment from many faculty in the same discipline. Institutions desiring more on-line instruction often resort to course preparation fees of $1-5,000 to develop an initial on-line experience. The combined initial costs of software, hardware and training far exceed initial returns on enrollment.

For faculty, however, the picture is not very rosy (Dervan, 2002; Lujan, 2001; West, 1999). Web classes do provide more freedom in our schedules. However, there are considerable disadvantages to consider. First and foremost is the **time and attention** given to on-line experiences. The creation of a quality on-line experience takes several months. Keeping an on-line course current in an ever changing Internet is also challenging. Second, there is the **pedagogy of Internet learning**. Streaming audio/video could provide an Internet alternative to the lecture, but as stated above, modem speeds have yet to support the technology. So, what replaces our lectures and live discussions? While I can create something that simulates these activities in text / graphics, are they the same quality as my live synchronous learning sessions? I seem to be in an ever trade-off of quality versus access and /convenience. If I require all students to experience several live lectures, we deprive some students any access to our learning environments. However, by going on-line totally on-line, has the quality of the experienced dropped more than our threshold of a credit-bearing academic experience?

Third, another prime detractor is **RPT evaluation**. There is little academic recognition for on-line preparation, execution and maintenance in yearly evaluations and especially in tenure and promotion reviews (Huber, 2001; Young, 2002). Faculty can compensate by teaching and publishing about their Internet experiences, however, that does not always hold weight with discipline-driven publishing professors who see these works as less academic than "real research." In fact, the scholarship of teaching and learning is in its infancy. A fourth factor against on-line courses, from a faculty point of view, is the **lack of administrative support**. Traditional academic departments have centralized assistance for basic academic and clerical work. On-line course management however is more like supporting non-credit workshops and seminars. Departmental staffs are ill-equipped to be mini marketing agencies, customer service centers, and IT Help Desks. Finally, there is usually a battle in **on-line courses on course enrollment caps**. Many faculty articulate that on-line students require more attention their in-class counterparts, and ask for class size maximums of 20-25. While this may be true, the higher education business economics discussed earlier will push for on-line classes of larger size. If there are no seats, what is the room size? I worked with a faculty member in another department who regularly taught 200 online students every semester.

Aside from personal faculty issues, there are also serious general academic **questions about the quality and integrity of the on-line product**. The standard 45 hours of lectures is now replaced with written mini-lectures, detailed power-points or in some cases, streaming audio / video. Are these valid replacements for what happens in a classroom? Who decides if they are – department chairs … curriculum committees? Who monitors the quality of the on-line product to ensure that it is close to its live counterparts? The most serious academic integrity issue is validating who is actually doing the work in an on-line experience. Is the student actually submitting their own work or taking their own tests? Some faculty require test taking on-campus. If we bring students to campus for tests (as I did my first two years of e-courses) are we defeating the very access that we wanted to create? If we have remote students, who is going to administer the exams? During one semester I had 11 students scattered across our Commonwealth. I spent more time hunting down test sites, test proctors and mailed exams for those 11 than I spent on the entire rest of the class combined.

The development of on-line experiences poses their own unique problems. University policies on copyright and fair use have not kept pace with the university-faculty issues in on-line learning. Most notably, when universities assist financially in on-line course development, are the funds an investment in faculty development or the purchase of a property right to offer a developed course at a later time with other, less tech savvy faculty? On the flip side of that issue, can faculty seek additional compensation with on-line educational services from courses they have personally developed over time and call it consulting? Aside from property rights, there are also very grey areas of copyright / fair use for digital learning. Once protected behind a username / password, is anything fair use? Can a faculty member purchase a movie and stream clips to classes in a course management system? Digital law is evolving slower that our teaching technology capabilities.

Despite many technological challenges and academic criticisms of on-line experiences, the higher education reality is it that on-line courses and probably degrees are here to stay. If traditional academic institutions do not face the tough issues discussed above, the University of Phoenix and several other electronic universities will simply take over that market share. Those graduates will be carrying the same diplomas, credentials and transcripts as our traditional students into the market place. If not on-line institutions, there are several businesses heavily invested in e-learning that will slowly by-pass traditional academics to create certificates and other academic sounding credentials, especially in the professional realms of management and technical support.

Framework for Democracy

One hybrid of the on-line world that minimizes many of the e-learning problems is tele-Web classes. Courses like "Framework for Democracy" by Houghton Mifflin and "Voices of Democracy" by Dallas Tele-learning provide quality instructional videos to replace traditional lectures. When combined with course management softwares, they can be a successful on-line experience. The tele-Web is basically an Internet wrap-around of the traditional tele-course. Instead of lectures, students watch videos either broadcast on local public broadcasting stations or rented at about the price of a text book (See http://www.rmimedia.com). The course management software brings the convenience of discussion forums, chat rooms, Internet activity, on-line testing, and on-line grading. Students new to e-learning find the tele-Web experience easier to face than the scary proposition of totally on-line course work. Similarly, faculty with web-enhanced experience can move to tele-Web courses without the massive time needed to replace lectures with on-line learning activities. We have taught these courses for three years, and student evaluations are very positive. The videos provide both faculty and student a crutch from the full jump to on-line. The serious nagging question in these courses is test taking. While tests can be done on-site to compensate, the administrative support for the exams can be extreme.

VOICES IN DEMOCRACY

VII. Conclusion

Is technology useful to building future learning environments? Viewed as a tool, and not an end unto itself, technology can improve instructional quality as well provide many administrative conveniences. For traditional synchronous learning, technology has many advantages which increase learning, especially in smart classrooms. However, that improvement does come on the backs of individual faculty time. For web-enhanced synchronous learning, technology can be very useful, especially if integrated appropriately and not layered onto current experiences. In fact, with the advent or portal systems, web enhanced classes through course management systems will probably become the norm of college teaching, even at the introductory level. It will be expected in the future the way email and word processor use is today. The main advantage is increased access and convenience because it breaks the limits of collaborative and active learning beyond the scheduled class time and place. Web-enhanced classes using a course management system do provide some relief to the lone wolf problem, but present their own difficulties. However, in the final analysis, they are worth the effort. For success at this technology level, faculty need investments in both time and

expertise. Finally, for on-line experiences, the picture is not as clear. While on-line coursework does increase access and convenience for certain audiences, it does not necessarily improve learning. In fact there is considerable debate as to its effectiveness. Measuring the success of on-line learning is still in its infancy (Lockee, et. al., 2002). For the gains of access and convenience, it is worth creating and using on-line experiences. However, there are several possible negatives for faculty. My advice would be to enter the on-line world slowly, with eyes wide open. In fact using tele-Web experiences provides a very useful step up from web-enhanced courses that minimize some of the full on-line course dangers.

What does technology hold for the future of teaching American Government? Sometimes techno-friendly professors make vast, Marxian-like predictions about the future of technology assisted and on-line education (Sonwalker, 2001). Faculty will not teach from classrooms, but broadcast from home / office to hundreds of students who can interact with us and each other through chat / tele-conference / web-cam technologies. We will parade down the aisle at commencement celebrations only to meet our students for the very first time! Other authors make more realistic appraisals of our techno-future (Karnovsky, 2001; Heerema and Rogers, 2002, Starkweather, 2002).

The forces of higher education economics, the shift from teaching to learning and the fast pace nature of technology will reshape our lives and work, as it does the lives of most professionals working in an information-based economy like the United States. **However, the driving force behind our passion and livelihood is the fact that the great majority of our students prefers and demand live instructional experiences.** In fact, on-line course equivalents may be more convenient for selected audience, but seen by most students as a cheaper delivery of the same product for the same price for their ever-increasing tuition dollar. If the cost is the same, why take on-line when you can learn live? It's more fun, exciting and dynamic. If it's not, well that's a matter of another paper on the state of faculty development. Students, who by time, by place or by personality that desire asynchronous learning alternatives will seek out, enroll and experience these environments. It is our job as faculty to ensure that these experiences are not driven by administrators looking at the bottom line of less bricks or parking spaces, by CIOs who purchase their favorite course management systems or faculty who just enjoy playing with technology and little regard for quality pedagogy. On-line courses, or even degrees should be carefully considered, target marketed and built with appropriate administrative support.

Technology can be seen as merely a tool that can be avoided, as a cool new toy that entices us to its use, as a looming reality that darkens our big brother future or just an excruciating anatomical body part pain. **This author advocates the use of technology – but as part of an overall strategy to create quality active learning environments that satisfy both the demands of higher education economics and the needs of today's passive student.** The best approach is an "eyes wide open" approach knowing the advantages / disadvantages of both using the technology and its impact on student learning.

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